



PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference KJLCT/P5426		FOR FURTHER ACTION		See Form PCT/PEA/416
International application No. PCT/GB2005/000930		International filing date (day/month/year) 10.03.2005		Priority date (day/month/year) 18.03.2004
International Patent Classification (IPC) or national classification and IPC INV. B65D19/40				
Applicant REILLY, Ian et al.				
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 4 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> sent to the applicant and to the International Bureau) a total of 5 sheets, as follows:</p> <p><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in electronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>				
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the report</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>				
Date of submission of the demand 11.10.2005		Date of completion of this report 16.06.2006		
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465		Authorized officer Augustin, W Telephone No. +49 89 2399-2629 		

**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/GB2005/000930

Box No. I Basis of the report

1. With regard to the **language**, this report is based on
- ☒ the international application in the language in which it was filed
 - ☐ a translation of the international application into , which is the language of a translation furnished for the purposes of:
 - ☐ international search (under Rules 12.3(a) and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4(a))
 - ☐ international preliminary examination (under Rules 55.2(a) and/or 55.3(a))
2. With regard to the **elements*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report):*

Description, Pages

1-3, 7-13 as originally filed
4-6 received on 11.10.2005 with letter of 11.10.2005

Claims, Numbers

1-9 received on 11.10.2005 with letter of 11.10.2005

Drawings, Sheets

1/4-4/4 as originally filed

- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (*specify*):
 - ☐ any table(s) related to sequence listing (*specify*):
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (*specify*):
 - ☐ any table(s) related to sequence listing (*specify*):

* If item 4 applies, some or all of these sheets may be marked "superseded."

**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/GB2005/000930

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-9
	No: Claims	
Inventive step (IS)	Yes: Claims	1-9
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-9
	No: Claims	

2. Citations and explanations (Rule 70.7):

see separate sheet

**INTERNATIONAL PRELIMINARY
REPORT ON PATENTABILITY
(SEPARATE SHEET)**

International application No.

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Re Item V

Prior art does not disclose nor suggest

a cardboard blank according to claims 1-5 comprising in particular opposing flaps on both end panels,

a support according to claims 6, 7 comprising in particular outwardly folded end flaps, nor

a support or pallet according to claims 8,9 comprising the above elements.

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has sufficient internal strength to withstand the weights that are applied to it and robust enough to withstand being mechanically handled and transported several times.

US 4,269,347 describes a storage file for storing file folders that uses a blank

5 having end panels provided with a flap

It is an object of the present invention to provide an improved corrugated cardboard support that aims to overcome, or at least alleviate the abovementioned drawbacks.

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It is a further object of the present invention to provide an improved corrugated cardboard pallet that aims to overcome, or at least alleviate, the abovementioned drawbacks.

15 Accordingly, a first aspect of the present invention provides a corrugated cardboard blank for the construction of a support, the blank comprising two main body forming panels, a middle panel between said body forming panels and two end panels, each main body forming panel and middle panel having opposing end flaps, characterised in that both end panels are provided with opposing end flaps.

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The panels and flaps are separated from their adjoining panel or flap by means of fold lines.

It is to be appreciated that a support is assembled from the blank by folding
25 the appropriate parts of the blank and securing them together using suitable means,

most preferably an adhesive. Adjacent panels are folded substantially at right angles to each other such that one of the end panels abuts the edge of the main body panel to which it is not connected. Glue is then applied to the outer surface of this end panel and the opposing end panel is folded over this panel and secured thereto by
5 suitable means. The end flaps of the panels making up the box are folded inwardly and secured to each other to form a closed box.

The end panels of the blank are preferably substantially identical in size. In this manner, in the assembled box, the opposing end panel overlaps substantially all
10 of the underlying end panel.

It is preferable for fluting to be formed in the longitudinal direction of the blank, i.e. from one end panel to the other since this increases the strength of the box formed from the blank.
15

Preferably, each end flap is 25% to 50% of the height of its corresponding panel, more preferably 40 to 50%.

The end flaps of the opposing end panel are preferably separated from the
20 panel by reverse fold lines whereby, in the assembled box, the flaps may be folded outwardly and secured to the panel.

A second aspect of the present invention provides a corrugated cardboard support comprising two substantially parallel opposing main body panels and two
25 pairs of opposing side walls wherein at least one side wall is at least double the

thickness of the main body panels characterised in that said at least double thickness is provided by at least one side wall having end flaps that are folded outwardly and secured to said wall.

- 5 The provision of at least one side wall that is at least double the thickness of the main body panels provides a support with inherent strength. In this respect, the main body forming panels receive the load and are supported by the side walls.

- 10 Preferably, the at least one side wall is double the thickness by the provision of a double layer of material. More preferably still, the overlapping outer layer is provided with end flaps for folding over and securing to the layer to increase the strength and thickness of the wall still further. It is preferable for one pair of opposing side walls that do not have double thickness to be formed from end flaps extending from the other side walls and the main body forming panels.

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It is to be appreciated that the blank according to the first aspect of the present invention is preferably used in forming a support according to the second aspect of the present invention. Additionally, the main panels and walls of the support may be any desired size.

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- A third aspect of the present invention provides a corrugated cardboard pallet, the pallet comprising a top sheet, a base sheet and at least one connecting member between said top and said base sheets, the connecting member being formed from a blank according to the first aspect of the present invention or a box according to the
- 25 second aspect of the present invention.

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CLAIMS

1. A corrugated cardboard blank (2) for the construction of a support, the blank comprising two main body forming panels (4, 6), a middle panel (8) between said body forming panels and two end panels (10, 12), each main body forming panel, and middle panel having opposing end flaps (24, 26, 28), characterised in that both end panels are provided with opposing end flaps (30, 32).
2. A blank as claimed in claim 1 wherein the end panels (24, 26, 28, 30, 32) of the blank are substantially identical in size.
3. A blank as claimed in claim 1 or claim 2 wherein fluting is formed in the longitudinal direction of the blank (2), i.e. from one end panel to the other.
4. A blank as claimed in claim 1, 2 or 3 wherein each end flap (30, 32) of each end panel is 25% to 50% of the height of its corresponding panel.
5. A blank as claimed in any one of claims 1 to 4 wherein the end flaps (30, 32) of one of the end panels are separated from the panel by means of reverse fold lines.
6. A corrugated cardboard support (100) comprising two substantially parallel opposing main body panels (4, 6) and two pairs of opposing side walls wherein at least one side wall is at least double the thickness of the main body panels characterised in that said at least double thickness is provided by at least one side wall having end flaps that are folded outwardly and secured to said wall.
7. A support as claimed in claim 6 wherein an overlapping outer layer (12) of the double layer of the side wall is provided with the end flaps (32) for folding outwardly and securing to the layer.

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8. A corrugated cardboard support (100) formed from a blank (2) according to any one of claims 1 to 5.

9. A corrugated cardboard pallet, the pallet comprising a top sheet (280), a base sheet (290) and at least one connecting member (300 – 380) between said top and said base sheets, the connecting member being formed from a blank (2) according to any one of claims 1 to 5 or a support (100) according to claims 7 or 8.